Seneca Vocational School

A Public Secondary School offering Vocational Education in the Mechanical Trades

BULLETIN

Division of Industrial Education

Board of Education

Buffalo, N. Y.

June, 1923

SENECA VOCATIONAL SCHOOL

A PUBLIC SECONDARY SCHOOL
offering
VOCATIONAL EDUCATION
in the
MECHANICAL TRADES

BUFFALO & ERIE COUNTY
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BULLETIN — JUNE 1923

DIVISION OF INDUSTRIAL EDUCATION
BOARD OF EDUCATION
BUFFALO, N. Y.

THE BUFFALO HISTORY MUSEUM

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SENECA VOCATIONAL SCHOOL

There are three important epochs in the history of any school; the past, the present and the future; or what a school has been, what it is and what it may be.

Seneca Vocational School started small, but the value of the training has evidenced itself by producing the school of today. The past of a school is seen by the students who have attended and gone out to find a place in the world's activities.

The school of today is known by its reputation, by the standing of the student body. During the past year Seneca has had every reason to be proud of the sincere co-operation of faculty and pupils. Seneca School of today is looking forward with confidence to the "tomorrow session."

The school of tomorrow will be an institution that is forecast by what the school of today is doing. As yesterday laid the foundation for the school of today; so the school of today is the building material out of which the superstructure of the school of tomorrow must be made.

Seneca's policies have been sane and farseeing, and despite many impediments, its progress has been sure. Some day, and it may be soon, adequate provision will be made for extended development, a favorable location and ample housing accomodations.

ELMER S. PIERCE,
Principal.

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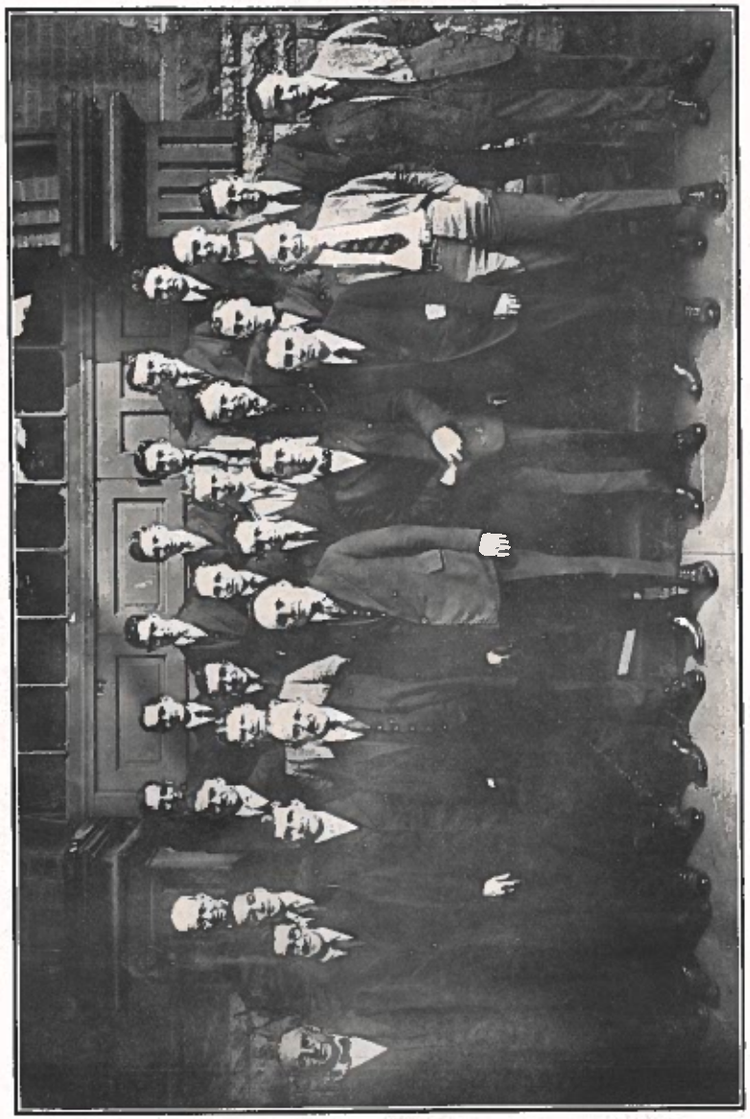


PRINCIPAL AND TEACHERS, SENECA VOCATIONAL SCHOOL

SUPERVISING OFFICIALS

Ernest C. Hartwell.....Superintendent of Schools
Francis H. Wing.....Supervisor of Industrial Education

FACULTY

Elmer S. Pierce.....Principal
Robert S. Hoole.....Assistant Principal
Artemas D. Dimmick.....Head of Academic Department
George Heald.....Head of Machine Department
David Warnhoff.....Head of Electrical Department
†Melvin A. McDowell.....Mathematics
†James E. Farrell.....Mathematics
†John W. Swannie.....English
†Andrew W. Grabau.....English
†John A. Collins.....Science
†Elmer R. Austin.....Science
†Walter Wanamaker.....Trade Drawing
††Howard H. Schweikhart.....Trade Drawing
††Harry C. Thompson.....Electrical Wiring
†George C. King.....Electrical Wiring
†Chris E. Kuehn.....Electrical Wiring
†Frank L. Verwiebe.....Electrical Power Plant Maintenance
†William J. Fisher.....Electrical Power Plant Maintenance
††Charles G. Magwood.....Radio Telephony
†††Elmer Kumpf.....Radio Telephony
††Theodore E. Kessler.....Electrical Shop Practice
†††William A. Morgan, Jr.....A. C. Motors and Generators
†††Harry H. Getz.....Arc Welding
†††William Dobbins.....Armature Winding
††Charles Hattenberger.....Tool Making
†Fred J. Atzrott.....Advanced Machine Shop Practice
††Frederick Theurer.....Elementary Machine Shop Practice
†††Harold E. Galvin.....Machine Shop Practice
†††A. W. Busch.....Machine Shop Practice
†††Emil Strub.....Photography
††Ethel B. Price.....Secretarial Assistant
†Sophia C. Williams.....Stenographer
†Anna M. Schlenker.....Cafeteria Manager
†Mrs. Theresa Buechert.....Cafeteria Assistant
†Mrs. May Paterson.....Cafeteria Assistant
††Archie Turner.....Engineer
†Edward Smith.....Assistant Engineer

†Day School. ††Day and Evening. †††Evening Only.

THE BUFFALO HISTORY MUSEUM

GRADUATING CLASS 1922

46 Electricians—19 Machinists

These boys were all placed in positions at time of graduating.

THE BUFFALO HISTORY MUSEUM

A TWO-FOLD AIM

The aim of Seneca Vocational School is two-fold. For the student fresh from the grammar school and contemplating an early advent into the industrial world, it offers a definite vocational training in the electrical and machine shop trades. It also provides evening instruction in these branches of industry for the man already in the mechanical field who is desirous of bettering his position in life.

Statistics compiled by the U. S. Bureau of Labor show that a large percentage of youths of this country enter wage-earning occupations at an approximate age of sixteen years. With the present high specialization of industry, coupled with the practical disappearance of the apprenticeship system, it is extremely difficult for such boys to obtain the fundamental training necessary for a successful trade experience. Therefore to meet this need, Seneca Vocational School has been established as a pioneer in this work. With this end in view, the school has installed modern high-grade equipment and an efficient staff of trained instructors.

Seneca Vocational School is open during the day from 8:30 in the morning to 3:00 in the afternoon. Those entering the evening course, which opens about the middle of September, meet every Monday, Wednesday, and Friday between the hours of 7:30 and 9:30 P. M.

Owing to increased registration of the past year, that has slightly impaired individual instruction, it has been necessary for Seneca Vocational School to raise the entrance requirements. Hence, in the future only boys who are bona-fide graduates of the elementary and parochial schools of this city will be admittted, although special exception may be made in case the prospective pupil has had the equivalent of an eighth grade education in an out-of-town school or in case a boy is able to prove by performance that he can do the work of this school satisfactorily.

To accomodate the large number of students that come from a distance a noon-day lunch is served in the school at cost price.

WHAT THE TRADES TAUGHT AT SENECA VOCATIONAL SCHOOL OFFER TO THE BOY

Electrical Trades	An extensive, practical and theoretical training in the mechanical fields of the electrical industry.
Machine Shop Trades	A thorough grounding in the fundamentals of machine shop practice, including the opening of as many avenues of information as possible in order to prepare the boy to become a leader in the line of machine shop practice in which he decides to specialize.
Trade Drawing	Training to use, read and make the blue prints essential to the development of the trade studied. Also, the medium whereby one can quickly present an idea in a concrete form.
Trade Mathematics	Training pupils to relate mathematics with shop work by introducing certain general principles of mathematics that will be indispensable in the industrial world.
Trade Science	Teaching of scientific principles underlying the operation of machinery. Giving instruction in the best methods of securing and maintaining good health through hygienic home and shop conditions.
English	Training the students to be fluent speakers, deep thinkers and intelligent readers.
Citizenship	Developing capacity for co-operative efficiency in local, state and national affairs.
Industrial Economics	Portraying the casual relations of physical environment to man, man and environment to products and products to trade. Analyzing the economic principles basic to modern industry.

ELECTRICAL TRADES

WIRING

All wiring jobs are done according to the rules and regulations of the Board of Fire Underwriters.

Every job is inspected by the instructors and tested with current of proper voltage.

Standard tools and materials are used on all jobs and students are taught the proper up-to-date methods of wiring.

Lectures on safety rules, Underwriters rules, and materials are given at regular intervals.

THE BUFFALO HISTORY MUSEUM

ELECTRICAL TRADES

WIRING

Electric sign wiring using different types of sign flashers comprises an important part of the wiring course.

The instruction in the wiring rooms covers work in the following classes, each boy doing a certain number of projects in each class.

Bell wiring, including annunciators and automatic drops.

Open work wiring for lights and power, using cleats and knobs.

Concealed knob and tube work such as is used in the wiring of new houses.

Steel conduit for exposed and concealed work.

Metal molding and armored cable.

ELECTRICAL TRADES

ELECTRICAL SHOP PRACTICE

In the day school the second, third and fourth year pupils repair and rewind motors and generators.

After a week or two of painstaking effort in re-winding a burnt-out motor armature it is a "grand and glorious feeling" to see it actually run.

Boys in this department have designed a 3 H. P. 3 phase induction motor, the drawings are complete and it is expected that five complete motors will be built each year.

The night school offers to men who wish to become armature winders, a very practical course in winding A. C. and D. C. machines.

THE BUFFALO HISTORY MUSEUM

ELECTRICAL TRADES

TELEPHONY

Every type of telephone in use today will be found in this department.

The course covers the designing, construction, installation, testing and repairing of telephones and switchboards, including line work, pole work and cable splicing.

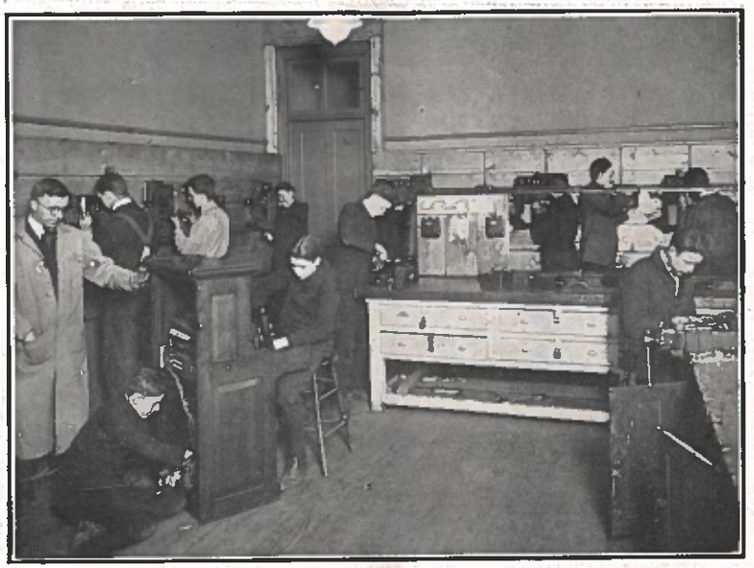
Telephony as a subject is intensely interesting, admitting individual ingenuity and encouraging new ideas.

Boys of inventive and mechanical trend of mind will surely find a telephony course enjoyable, instructive and financially profitable.

ELECTRICAL TRADES

TELEPHONY

All the telephones in the public schools of the city are repaired here. This not only furnishes practical work for the boys, but is a great saving to the city.



The boys have designed and are now manufacturing their own wall telephones. The wood cases were made in the Cabinet Shop of the Peckham Vocational School. The die work and stamping of metal parts was done in our own Machine Shop.

The Telephones are assembled and tested in the Electrical Department.

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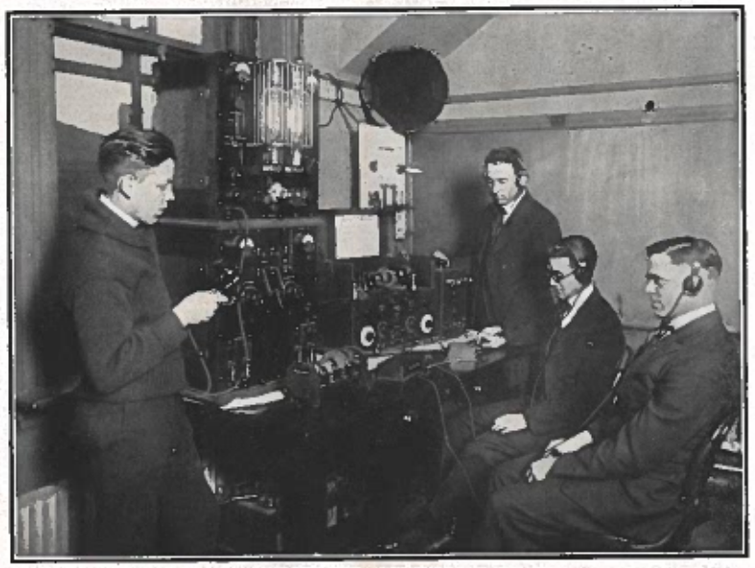
ELECTRICAL TRADES

RADIO TELEPHONY

Through popular demand, this fascinating study in science has been forced to the front and is now a feature of the school curriculum. The



day and evening sessions present principles of operation, testing and laboratory work, and the construction of radio equipment.

Code practice and broadcasting are the special features of the evening classes. This is done by means of the most complete and up-to-date amateur radio sets now available, thus insuring pleasure as well as great profit to the student.

ELECTRICAL TRADES

ELECTRICAL POWER PLANT MAINTENANCE

The electrical equipment consists of every type of instrument and machine found in the modern power plant or laboratory.

After necessary preliminary instruction each boy connects and operates every machine.

This trade has been termed the "Trade of Mystery," but here most of the mysteries are gradually unfolded.

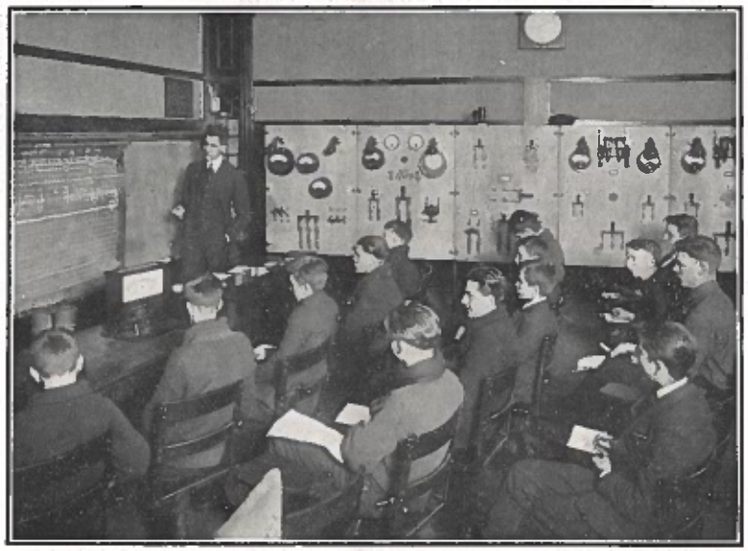
To discover the secrets of a transformer gives the ordinary boy a feeling of pride and self-confidence in his abilitiy.

THE BUFFALO HISTORY MUSEUM

ELECTRICAL TRADES

ELECTRICAL POWER PLANT MAINTENANCE

Here theory and practice go hand in hand.



The elementary principles of electricity and magnetism are given here where equipment for any and every kind of test and experiment is instantly available.

This is the "Why" part of the institution, when a boy leaves the electrical laboratory, he not only knows how a piece of apparatus works, but why it works.

ELECTRICAL TRADES

ILLUMINATION

Correct lighting is more than turning on a switch or socket. It means selecting the right lamp or fixture, proper spacing of outlets and correct height as mathematically figured for the fixtures.

The study of correct lighting is a timely one when we consider that the number of boys and girls, between the ages of five and fifteen, who are wearing glasses, is rapidly increasing.

In our course of lectures, we cover all the different types of fixtures used in school, factory, home and office lighting.

We also study the elimination of glare and shadows, proper intensities and use of the foot candle meter.

THE BUFFALO HISTORY MUSEUM

ELECTRICAL TRADES

ELECTRICAL WELDING

The field for electric welding is unlimited. It is now used in all branches of the metal industry in which work is done in iron, steel and other alloys.

Electric welding is a low voltage operation and the danger from electrical shocks is eliminated.

The welding equipment consists of an electric arc welder, a butt welder and a spot welder.

The electric welders are used extensively in our shops to repair broken parts and also in the manufacture of junction outlet boxes, where the seams are welded instead of riveted.

ELECTRICAL TRADES

ELECTRIC WELDING

The electric arc is rapidly replacing the older method of acetylene welding because of the higher temperature, convenience of application and low cost.

The arc welder who understands the theory of his machine has a great advantage over the man who understands only the mechanical operations. Seneca teaches both.

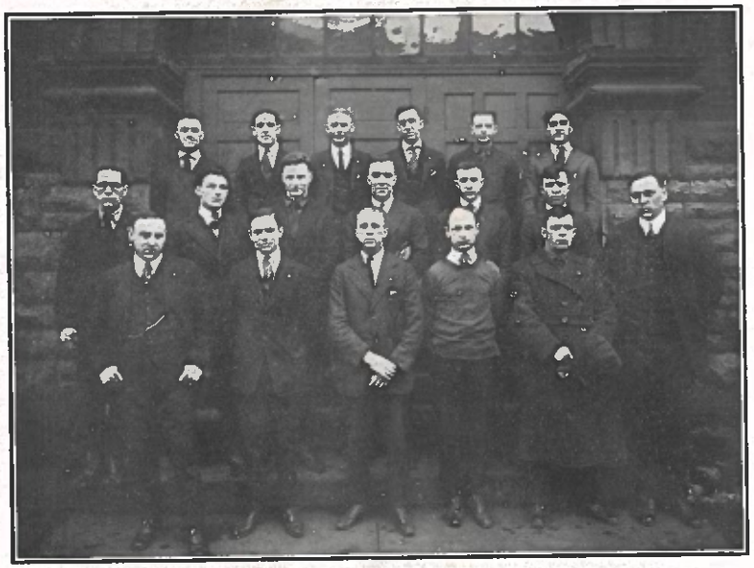
Welding, in the modern sense of the word, covers a number of distinct operations. It is necessary to know how the arc operates when dealing with the various kinds of iron, steel and alloys.

THE BUFFALO HISTORY MUSEUM

ELECTRICAL CONSTRUCTION

GOVERNMENT REHABILITATION CLASS

Soldiers, Sailors and Marines who have been disabled in the World War are being trained at this school to enter the various electrical fields.



The United States Veterans' Bureau through this School undertakes to give the disabled man trade improvement training whereby his previous earning capacity is equaled or increased.

After one or two years of training the Government places the man in a suitable position and pays him until he is able to earn a satisfactory salary.

As a large number were trained at this School for war service, it is equally fitting that those maimed in the conflict may here be rehabilitated for peace and prosperity.

ATHLETICS

BASKETBALL

THE SENECA TEAM—1922-23

The Western New York Vocational Championship was won, for the second consecutive season, by the Seneca Team.

In addition to the Vocational League Games Seneca has played and defeated some of the best Junior High School teams in Western New York.

THE BUFFALO HISTORY MUSEUM

ATHLETICS

THE PETER JENSS TROPHY

AWARDED TO SENECA FOR WESTERN N. Y. VOCATIONAL CHAMPIONSHIP.

ATHLETICS

BASKETBALL

9TH GRADE TEAM—1922-23

The Ninth Grade Team finished well up in the race for the championship of Ninth Grade Teams, conducted under the auspices of the Public School Athletic League of Buffalo.

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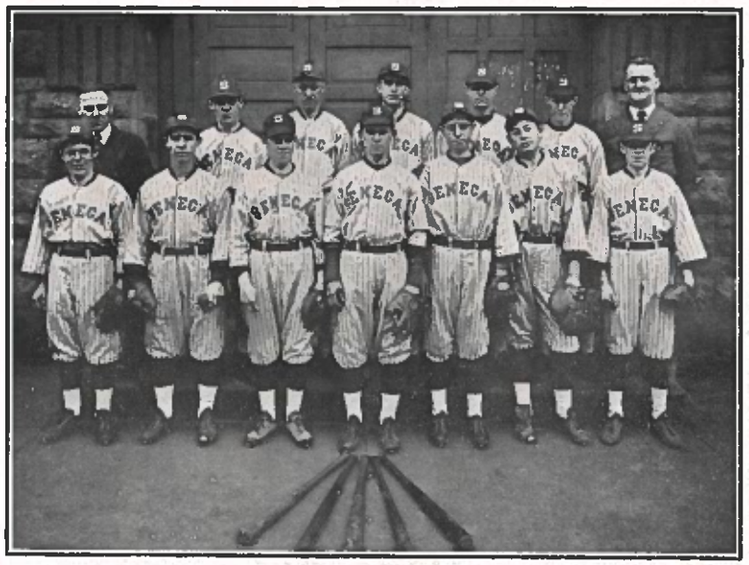


The above team represented Seneca in playing some of the best high school teams in Western New York.

Winners of the P. S. A. L. Baseball cup for the season of 1922.

DRUM CORPS

Seneca's Drum Corps was organized in the Fall of 1921 with a membership of twenty-four boys.

Rehearsals are held weekly, and the boys are also given free instruction in playing the fife, bugle and drum.

The Drum Corps played at many of the basketball games and helped the teams to victory by their stirring music.

All the instruments are owned by the school.

THE BUFFALO HISTORY MUSEUM

ORCHESTRA

Seneca's Orchestra was organized seven years ago with four pieces. Each year has seen an increase in its number until now we have sixteen pieces.

Through the Orchestra we have been able to interest boys in studying some musical instrument. The value of music in a vocational school has been demonstrated.

This year has seen a great improvement in the playing, owing largely to the competent direction of the orchestra leader, Mr. Elmer R. Austin.

ASSEMBLY

If you want to see a large, good natured, congenial family visit one of our weekly assemblies. You will be greatly impressed by the spirit displayed by the students who comprise this family, known as Seneca School.

No one, who has visited our School at this time has ever left without realizing that it is the spirit dominating the assemblies which also makes itself so effectively felt in other school activities.

Each week the different activities of the school are discussed and explained; an interesting talk or lecture is provided, together with singing and instrumental music.

THE BUFFALO HISTORY MUSEUM

CIVIC COMMITTEE

Aim. The development of character through self-expression and consideration of the rights of others.

Composition. To consist of sixteen members—one from each class.

Meetings. Held every Wednesday and conducted along parliamentary lines.

Powers. Trial of pupils accused of misdemeanors and suggestion of disciplinary methods.

Promulgation of a higher standard of school management and atmosphere to assist the Faculty in producing a school 100 per cent efficient in all respects.

Result. Growth in the boys' interest; creation of an attitude of responsibility, authority, and instillation of ideals which produce good students, sons and citizens.

THE LANGUAGE OF MECHANICAL DRAWING

The subject of Mechanical Drawing is of great interest to all mechanics and engineers.

The working drawing takes the place of lengthy explanations either written or oral.

The better and more clearly the drawing is made, the more intelligently the workman can comprehend the idea of the designer.

To make a sketch so others can use it; to read a blue print that another has made; to be accurate in detail, neat in arrangement and execution are the purposes of the work.

THE BUFFALO HISTORY MUSEUM

ENGLISH

The modern employer demands good fluent English from every employee.

To be a successful electrician or machinist, every individual must have mastery of the language of his country.

To accomplish this ideal the English course has been framed as follows:

Oral English. The aim of which is to instill confidence in the pupil to stand before an audience and talk with ease and grace.

Literature. A study of the works of the masters of literature, and the development of an appreciation for them.

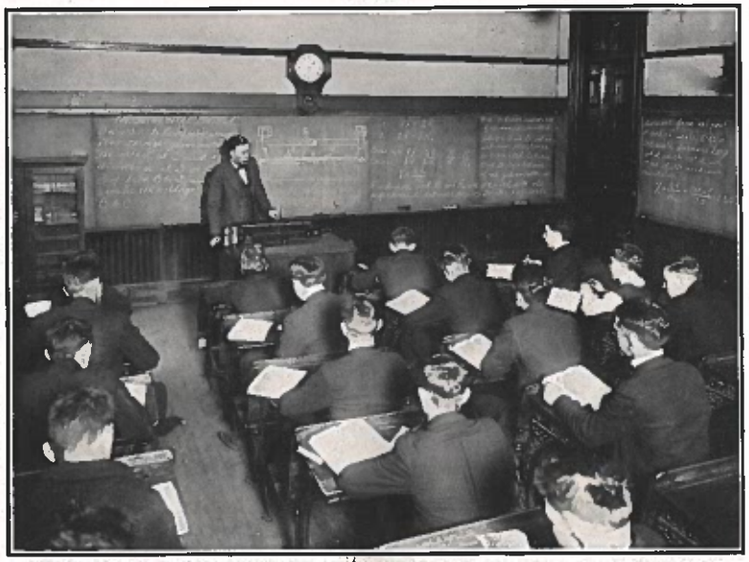
Reading. The primary object is intelligently to develop a love for good reading.

MATHEMATICS

Mathematics as taught in a Vocational School is a vital subject and one which receives a great deal of attention.

The courses for the electrical and mechanical departments are fundamentally the same.

The rudiments of arithmetic, algebra, geometry and trigonometry are treated concisely and thoroughly.



In the application of the formal mathematics to the practical needs of the separate branches of industry the similarity in the courses gives way to a complete and diversified treatment of the rules and formulae of both trades.

Throughout all the course a great deal of importance is attached to checking calculations, which requirement is necessary to the careful and successful student and workman.

It can be seen that the courses offered in a Vocational School serve a dual purpose. The State requirements for mathematics credits is realized and this augumented by the fact that the student has been furnished with a thorough knowledge of the mathematics of his trade which will serve him well when he joins the ranks of workers in the industrial world.

THE BUFFALO HISTORY MUSEUM

SCIENCE

The Science at Seneca relates directly to the Electrical and Machine Shop trades.

The composition, manufacture and strength of the materials used in both the above trades is thoroughly covered.

The mechanics of solids, gases, liquids and the application of heat, sound and light are treated in so far as they will be of practical use to our boys.

This year our Science course is the equal of that of the best secondary school in the country.

COMMERCIAL GEOGRAPHY

The student utilizes his formal knowledge of physical and political geography in the study of the products, industries and commerce of the United States.

He sees the casual relation of physical environment to men and of men to environment.

He sees the relations of men and environment to products and of products to trade.

He sees trade affected by inventions, government, industrial processes and transportation conditions.

The subject is made interesting by the collection of a variety of commercial materials in raw state and in stages of manufacture and as a finished product.

Local industrial plants are emphasized.

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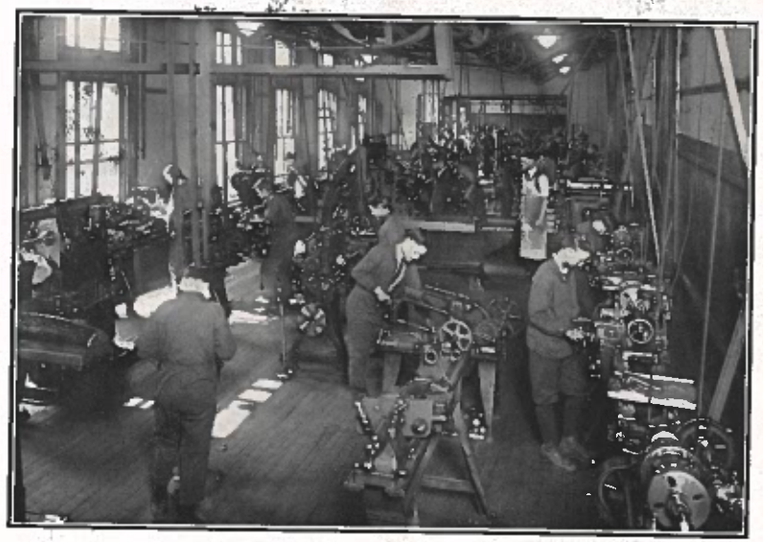
MACHINE SHOP PRACTICE

MACHINE EQUIPMENT

We have the most modern equipped machine shop in New York State for teaching boys the machinist's trade.

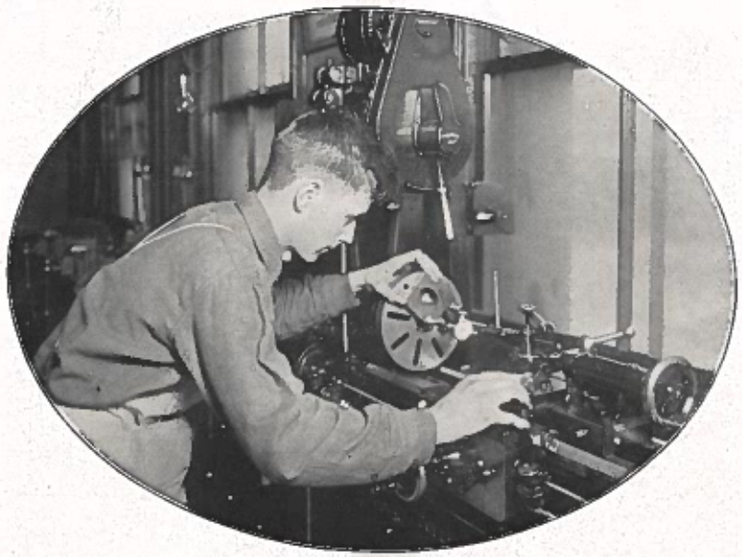


One hundred boys receive training in this shop each day.

If you desire your boy to become an expert machinist or a leader in the mechanical field, have him attend a Vocational school.

TOOL MAKING

To become a successful toolmaker one should be familiar with the properties of the steels one uses.



Instruction in this class is given in the art of hardening, tempering, case hardening and annealing.

The tool room equipment is strictly modern and is in a separate department. It includes all the tools and appliances used in any up-to-date tool room.

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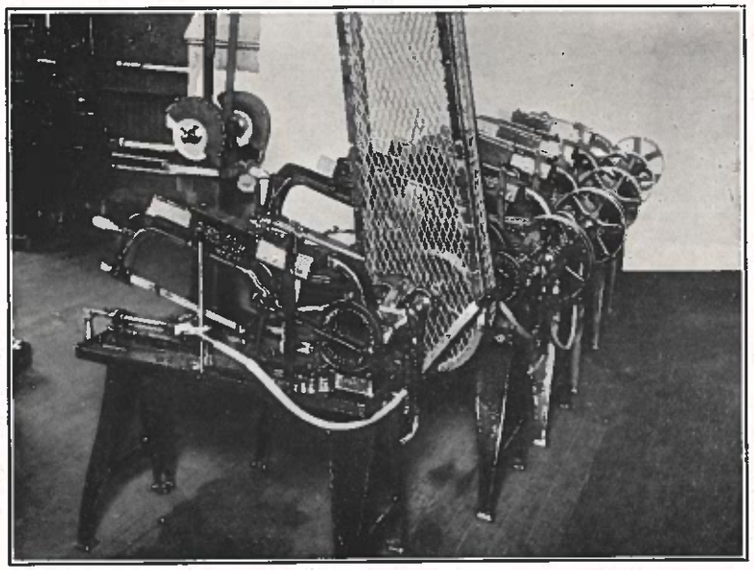
MACHINE SHOP PRACTICE

PRODUCT

The work done in the machine shop is highly interesting.

Some of the machines now being used were built by the boys of this school.



Some apparatus for college laboratories has been built by the boys.

There is a great deal of pleasure and satisfaction for a boy in helping to build a machine, watching its growth from start to finish.

The projects shown in the picture are types of the work done in this school.

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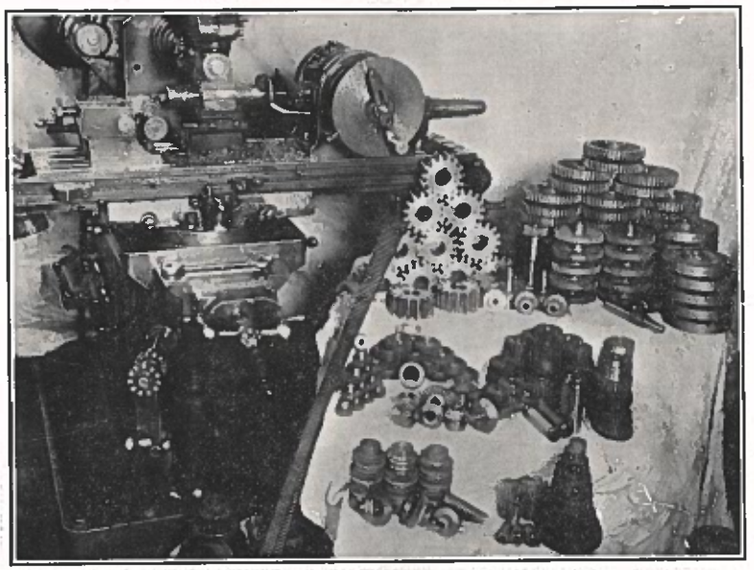
ELECTRICAL TRADES

MACHINE SHOP PRACTICE

Do you know that the opportunities for learning a trade in school are greater today than ever before?

Men who flock to the night school realize this fact.



MACHINE SHOP PRODUCTS

There are employed in Buffalo many thousands of men in machine shop occupations.

The more highly skilled a man is the better his chances are for a permanent position.

Are you a mechanically inclined ambitious person?

Why not get a training that will enable you to become a leader among your fellow-workmen?

CAFETERIA

The Cafeteria is an important feature of the School, for it is here that the pupil may purchase at a minimum cost, wholesome, nourishing food.

It not only teaches them the value of money in relation to proper food, but furnishes them with a meal according to dietary standards.

A well nourished mind is impossible in a poorly nourished body and physical health is essential to the full mental and moral development.

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